



LANL Legacy Waste Cleanup Status

for Radioactive and Hazardous Materials Committee

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Outline

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- Risk Reduction Approach
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Background - Consent Order Governs Cleanup

- ☐ Signed by New Mexico Environment Department, NM Attorney General, DOE, and University Of California (since superseded by LANS) on March 1, 2005
- ☐ Issued pursuant to the New Mexico Hazardous Waste Act and New Mexico Solid Waste Act (under state RCRA authority)
- ☐ Order on Consent represented the first “fence to fence: legally enforceable cleanup agreement between DOE and the State of New Mexico over legacy cleanup at LANL”
- ☐ Prescriptive – not clearly risk based
- ☐ Mechanism for implementing RCRA Corrective Actions
- ☐ Required the Department to complete all Cleanup Activities no later than December 2015
- ☐ Order on Consent assumed cleanup funding levels that never materialized
- ☐ DOE publically acknowledged in January 2012 that it will not meet the 2015 completion milestone

Background - Risk Reduction Approach

- ❑ **Cerro Grande (2000) and Las Conchas (2011) Fires focused attention on TA-54 TRU Waste**
- ❑ **Opportunity to shift to a Risk Reduction Approach**
 - Began preliminary discussions with NMED shortly after New Mexico's Administration change in January 2011 and met with NM Governor Susana Martinez on September 13, 2011
 - Framework Agreement rolled out to the public at the Northern New Mexico Citizens' Advisory Board meeting on January 5, 2012
- ❑ **Framework Agreement Realignment Environmental Priorities based on Risk Reduction Approach**
 - Removal of non-cemented above-ground TRU currently-stored at Area G by June 2014 (3,706 m³)
 - Removal of all newly generated TRU waste received in Area G during FY12/FY13, by December 2014
 - Develop schedule for disposition of the below-ground TRU at Area G by December 2012 (Completion by 2018, except 33 shafts)
 - Groundwater and surface water protection also emphasized

Background - 3,706 Campaign

- ❑ **3,706 Status**
 - 3,327 of 3,706 removed from LANL
 - 90% of Volume
- ❑ **On May 30, DOE announced that the 3,706 Campaign would not be completed on schedule due to the suspension of disposal operations at WIPP & the ongoing evaluation related to the treatment and remediation of LANL's unconsolidated nitrate salt bearing waste**
- ❑ **All TRU Waste Operations are paused while the cause of the WIPP event is investigated**



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WIPP Event - Chronology of Events

- ❑ **February 5: WIPP Underground Fire**
- ❑ **February 14: Radiological Release**
- ❑ **April 1: LANL began shipping TRU waste to WCS for temporary storage and ultimate disposal at WIPP pending resumption of operations**
- ❑ **May 1: Curtailed shipments to WCS based on concerns from WIPP related to Nitrate Salts waste stream**
- ❑ **May 15: LANL Nitrate Salt Waste Drum Breach confirmed**
 - AIB has yet to determine cause vs. effect
- ❑ **LANL Nitrate Salt Waste Drum Locations**
 - 86 (57 remediated, 29 un-remediated) Nitrate Salt Drums remain at LANL
 - 116 Nitrate Salt Drums reside at WCS for temporary storage
 - 55 Nitrate Salt Drums are in Panel 7 at WIPP
 - 453 Nitrate Salt Drums are in Panel 6 at WIPP (Count includes “Suspect” Drums)

WIPP Event - Safety is Paramount

❑ LANL Has Taken Rigorous Precautions to Secure the Nitrate Salt Waste Drums

- Over-packed in Secondary Containment
- Daily Thermographic Measurements
- Continuous Air Monitoring
- Stored in Boxlines with Continuous Ventilation and HEPA Filtration
- All Storage Locations Equipped with Fire Suspension
- Vegetation Controls in Area G are in Place to Protect Domes Against Wildfire
- Emergency Response (if required) is in Place



Standard Waste Boxes in Dome 375



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WIPP Event - Safety is Paramount

❑ At WCS:

- Containers are retrievably stored within the Federal Waste Facility
- Daily Thermographic Measurements
- Over-packed in secondary containment (standard waste boxes)
- Over-packed in tertiary containment (mobile concrete containers)



Mobile Concrete Containers



LANL TRU Waste at WCS



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WIPP Event - Regulatory Actions

- ❑ **May 19: NMED issues Administrative Order**
 - LANL Responded with a Container Isolation Plan on May 21
 - NMED Issued Contingent Approval on May 23
 - LANL Answered Additional Questions and Resubmits A Revised Plan on May 29
- ❑ **June 16: NMED sends LANL a request for additional information regarding the generation and treatment of hazardous waste at LANL**
 - LANL submitted the requested information by the response date of July 3
- ❑ **July 1: LANL Self Discloses Noncompliance with Hazardous Waste Permit**
 - Unpermitted Treatment (used reagents to neutralize waste without a permit – did not remediate appropriately)
 - Failure to Reevaluate Acceptable Knowledge Determination (did not reevaluate the unconsolidated nitrate salt-bearing waste to assess accuracy of the initial waste characterization)

WIPP Event - What We Know So Far

- ❑ **One LANL TRU Nitrate Salt drum has been visually observed to have undergone an energetic event**
 - Resulted in failure of the physical integrity of the drum
 - Material release appears to have occurred
- ❑ **The LANL drums contain nitrate salts and various organic constituents (waste materials and liquid absorbents)**



Known Breached Drum at WIPP

WIPP Event - How We Are Moving Forward

- ❑ Continuing to Work Cooperatively with WIPP and the Accident Investigation Board to determine the cause of the February 14 Radiologic Event
- ❑ Cooperating with and assisting DOE's Technical Assistance Team
- ❑ LANL has designated a Principal Associate Director as the Recovery Manager reporting directly to the Laboratory Director
- ❑ Treatment Team has been commissioned and is evaluating a path forward to treat the Nitrate Salt Waste Containers
- ❑ Comprehensive review of our management systems, procedures, and practices is ongoing

Environmental Cleanup Work Progress

❑ Soil & Water Remediation Progress

- Completed investigations and remediations and received certificates of completion for 1,117 of the 2,123 SWMUs owned by the Program
- Completed 9 out of 29 aggregate areas
- Completed 11 of the 26 Material Disposal Areas in the Consent Order
- Installed and maintained over 140 groundwater monitoring wells
- Installed and maintained 52 gage stations and monitored 250 sites with over 1000 storm water controls
- Consent Order – Completed 1117 of 2123 Potential Release Sites
- Monitoring – 140 well locations and 175 surface waste locations



Important Environmental Cleanup Work Remains

❑ TRU Waste

- Remaining Above-Grade Legacy Waste
- FY12/FY13 TRU Waste
- Below Grade Retrievals planning:
 - CMP Disposition
 - Trenches A-D/Pit 9
 - Hot Cell Liners, Tritium Tanks & 17th Canister
- 33 Shafts

❑ Remediation

- Water Protection
- Bias for Action
- Aggregate Areas and Technical Area 21 (TA-21)
- MDA Remedies



Important Environmental Cleanup Work Remains

❑ Institute a Risk Based Approach Around Discrete Projects

- Based on measurable risk reductions
- High Importance to Stakeholders
- High Importance to Regulators

❑ Top 4 Risk Based Cleanup Action Projects are

- Chromium Contaminated Ground Water
- Royal Demolition Explosive (RDX) Contaminated Ground Water
- Surface Water Boundary Protection
- Individual Storm Water Permit Controls & Compliance



Important Environmental Cleanup Work Remains

❑ Bias for Action

- MDA L SVE

❑ MDA Remedies

- MDA H
- MDA C
- MDAs G and L
- MDAs A and T
- MDA AB

❑ Aggregate Areas and TA-21

- Complete Site Investigations
- Administrative Sites Completion
- Historical Properties Completion
- TA-21 D&D and Site Completion
- General's Tanks Removal
- Priority Site Cleanups



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Budget Outlook

❑ FY14 Budget

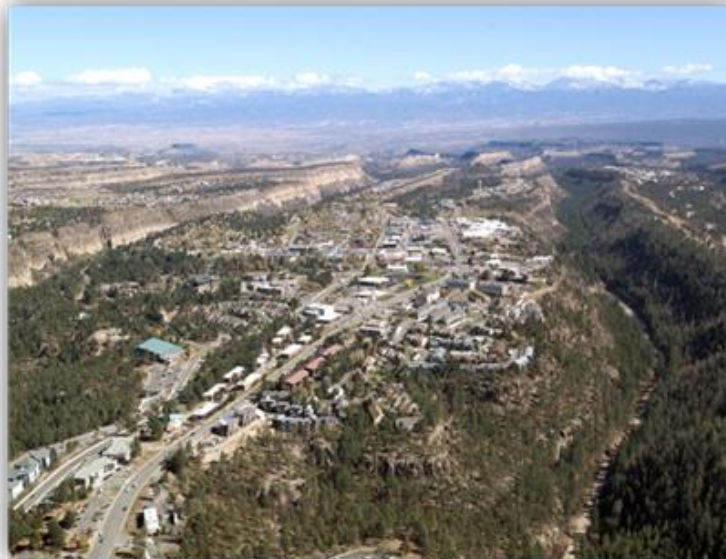
- FY14 Appropriation = \$225M

❑ FY15 Budget

- FY15 President's Budget Request = \$225M
- House Energy and Water Mark = \$175.4M for LANL
- Separate \$4.6M for Chromium Pump and Treatment Facility (Line Item Construction)

❑ FY16

- Budget Numbers Embargoed



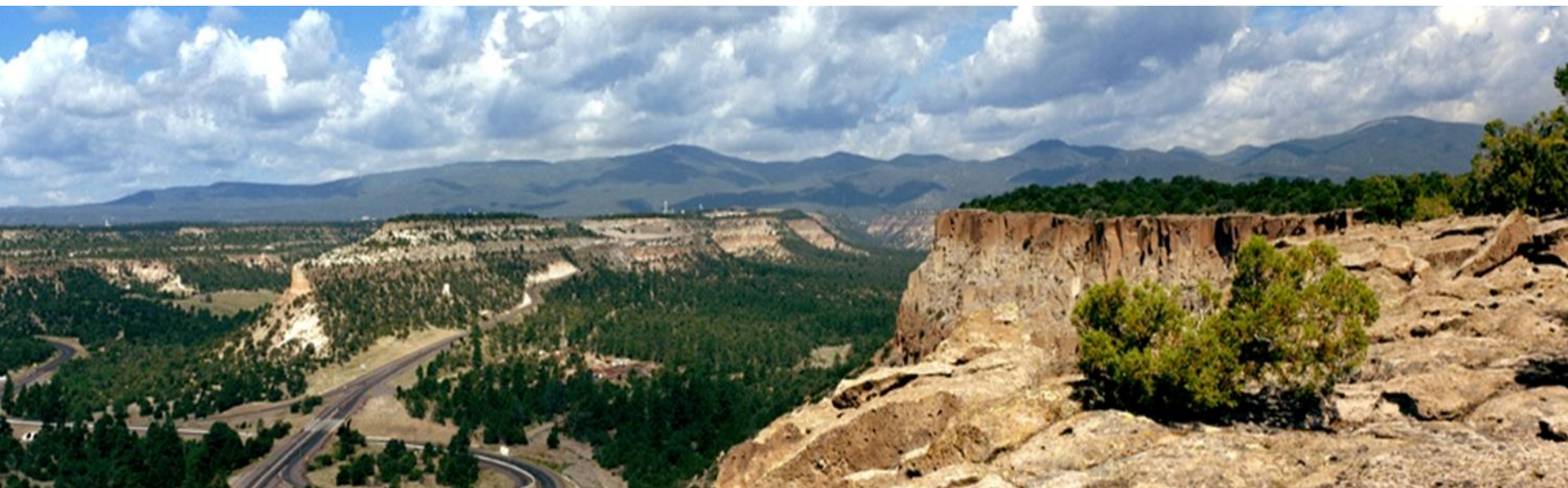
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Summary

- ❑ Significant Cleanup work has been accomplished
- ❑ Public and worker safety is LANL's first priority
- ❑ Relationship with our Regulators is Paramount to Meeting our Responsibilities
- ❑ Environment is a Public Program



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